REMARKS

This Amendment is responsive to the Office Action mailed March 9, 2010. By this Amendment, Applicants cancel claims 20-24 and amend claims 1, 11, 15, and 25. Claims 1-19 and 25 are pending; claims 3-5, 9, 18, and 19 are withdrawn.

Reconsideration and withdrawal of the rejections made in the above-referenced Office Action are respectfully requested in view of the amendments and remarks herein. Support for the amendments as filed can be found in the specification and claims as filed, e.g., at paragraph [0113] of the published version of this application, US 2006/0004706 A1.

Requirement for Restriction

The Examiner has reconsidered the Requirement for Restriction mailed October 5, 2009, and made it final.

In response, Applicants note that withdrawn claims 3-5, 9, 18, and 19 remain pending, subject to possible rejoinder. Applicants respectfully request that the Examiner rejoin the withdrawn claims upon indication of allowable subject matter.

Information Disclosure Statements

Applicants thank the Examiner for consideration of the Information Disclosure Statements filed February 11, 2010 and December 2, 2009. In particular, Applicants note that, while the Examiner did not initial next to the non-patent documents (Office Actions issued in connection with U.S. Patent Application Nos. 11/575,940 and 11/850,629) listed in the IDS of December 2, 2009, or next to Document 2 in the IDS of February 11, 2010, the Examiner has

indicated consideration of these Information Disclosure Statements "in full" on page 2 of the Office Action dated March 9, 2010. In addition, the Examiner indicates at the bottom of the IDS of February 11, 2010, that all references have been considered except where lined through. Accordingly, *all* of the documents listed in the Information Disclosure Statements of December 2, 2009 and February 11, 2010 appear to be formally made of record. If the Examiner finds that this is not the case, the Examiner is hereby requested to make these documents formally of record or to contact the undersigned at the telephone number below.

Rejection of the Claims Under 35 U.S.C. § 112, Second Paragraph

Claims 20-23 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for recitation of a use without any active, positive steps delimiting how this use is actually practiced.

In response, and without acquiescing to the propriety of the rejection, Applicants submit that the instant rejections are rendered moot by the cancellation of claims 20-23. Accordingly, Applicants respectfully request reconsideration of the instant rejections and withdrawal of the same.

Rejection of the Claims Under 35 U.S.C. § 101

Claims 24-25 are rejected under 35 U.S.C. § 101, as allegedly drawn to non-statutory subject matter. In particular, the Office Action states that claim 24 is drawn to a program for carrying out the method of claim 1. However, the program as claimed is allegedly not embodied on a computer and does not comprise any limitations or instructions such that it is interpreted as a physical product or a method. The Office Action further states that claim 25 is drawn to a

computer readable medium which stores the program for carrying out the method of claim 1. However, the computer readable medium is allegedly not defined in the specification to be a physical object, therefore the claims are allegedly not necessarily directed to a physical product.

In response, and without acquiescing to the propriety of the rejection, Applicants submit that claim 24 has been cancelled, and therefore the rejection with respect to claim 24 is moot.

Applicants further submit that upon entry of the present paper, and without acquiescing to the propriety of the rejection and solely to expedite prosecution of the present application, claim 25 will have been amended to recite a "[a] computer-readable non-transitory medium which stores the program for carrying out the method of claim 1." In this regard, it is submitted that, as acknowledged by the memo titled "Subject Matter Eligibility of Computer Readable Media" dated January 26, 2010 and signed by David J. Kappos, claims drawn to non-transitory computer-readable medium are statutory subject matter under 35 U.S.C. § 101. Furthermore, also as acknowledged by the above-mentioned memo, it is submitted that such an amendment does not constitute prohibited new matter as the present application is not limited to a signal *per se* as the only viable embodiment.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 24-25 under 35 U.S.C. § 101.

Rejection of the Claims Under 35 U.S.C. § 103(a)

The Office Action rejects claims 1, 10, 11, 15, 16, and 20-25 under 35 U.S.C. § 103(a) as allegedly unpatentable over Winslow et al. (WO 00/65523; hereinafter "Winslow"). In particular, the Office Action concedes that Winslow fails to teach "a computer that generates and displays a second molecule network comprising the first molecule network and information on

contiguous linkages of molecules which starts from the biomolecule designated by the user" in claims 1 and 16 (Office Action at page 6, last paragraph). However, the rejection alleges that such a method would have been obvious to one of ordinary skill in the art at the time of the instant invention since Winslow allegedly shows "generating 'first level' binary data structures," "pathway data structures based on a composition of binary data structures," and "database elements arranged in hierachical format," which features are alleged to implicitly show a second molecule network comprising a first molecule network and information on contiguous linkages of molecules which starts from the biomolecule designated by the user (Office Action at page 6, last paragraph).

In response, Applicants submit that the claimed subject matter is not unpatentable over Winslow. In particular, and without acquiescing to the propriety of the rejection, Applicants submit that the present rejection is moot with respect to claims 20-24 in view of Applicants' cancellation of the same.

With respect to the obviousness rejection of claims 1, 10, 11, 15, 16, and 25, Applicants submit that Winslow fails to teach or fairly suggest "[a] method of generating and displaying a molecule network by a computer comprising:

using a database comprising information on biomolecule pairs and information on bio-events which correlates a bio-event to a biomolecule or a biomolecule pair which causes the bio-event, the computer searches information on biomolecule pairs for generating information on contiguous linkages of molecules wherein the number of the linkages is within a designated number, starting the search from a biomolecule designated by a user from biomolecules contained in a first molecule network representing linkages of two or more biomolecule pairs linked in the network;

based on the information on biomolecule pairs obtained by the search, the computer generates and displays a second molecule network comprising the first molecule network and information on contiguous linkages of molecules which starts from the biomolecule designated by the user; and

the computer further searches and displays information on bio-events correlated to biomolecules or biomolecule pairs contained in the second molecule network."

In particular, Applicants submit that since the "binary data structure" of Winslow refers to a network representing linkage of two elementary data structures, such a network does not correspond to "a first molecule network representing linkages of two or more biomolecule pairs linked in the network" as in the presently-claimed subject matter. Accordingly, Applicants submit that the claimed subject matter would not have been obvious over Winslow.

Based at least on the foregoing, Applicants respectfully request reconsideration of the rejection under 35 U.S.C. § 103(a) and withdrawal of the same.

The Office Action also rejects claims 1, 2, 6, 7, 10-12, 14-17, and 20-25 under 35 U.S.C. § 103(a) as allegedly unpatentable over Winslow in view of Itai et al. (US 2004/0024772; hereinafter "Itai"), in view of Kanehisa et al. (*Nucleic Acids Research* **28**(1):27-30, 2000; hereinafter "Kanehisa"), and in view of Takai-Igarashi et al. (*In Silico Biology* **1**:129-146, 1999; hereinafter "Takai-Igarashi").

In response, and without acquiescing to the propriety of the rejection, Applicants submit that the present rejection is moot with respect to claims 20-24 in view of Applicants' cancellation of the same.

Moreover, Applicants submit that the claimed subject matter is not unpatentable over Winslow in view of Itai in view of Kanehisa, and in view of Takai-Igarashi for at least the reasons set forth above with respect to the obviousness rejection over Winslow. In particular, Applicants submit that Winslow fails to teach at least "a first molecule network representing linkages of two or more biomolecule pairs linked in the network," and that none of the other cited documents, either alone or in combination, compensates for this deficiency.

Accordingly, Applicants respectfully request reconsideration of the rejection under 35 U.S.C. § 103(a) over Winslow in view of Itai, in view of Kanehisa, and in view of Takai-Igarashi, and withdrawal of the same.

The Office Action also rejects claims 1, 2, 6-8, 10-17, and 20-25 under 35 U.S.C. § 103(a) as allegedly unpatentable over Winslow in view of Itai, in view of Kanehisa, in view of Takai-Igarashi, and in view of Hogue et al. (WO 00/48092; hereinafter "Hogue").

In response, and without acquiescing to the propriety of the rejection, Applicants submit that the present rejection is moot with respect to claims 20-24 in view of Applicants' cancellation of the same.

Moreover, Applicants submit that the claimed subject matter is not unpatentable over Winslow in view of Itai in view of Kanehisa, and in view of Takai-Igarashi for at least the reasons set forth above with respect to the obviousness rejection over Winslow. In particular, Applicants submit that Winslow fails to teach at least "a first molecule network representing linkages of two or more biomolecule pairs linked in the network," and that none of the other cited documents, either alone or in combination, compensates for this deficiency.

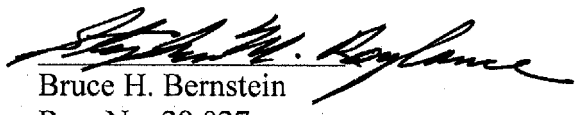
Accordingly, Applicants respectfully request reconsideration of the rejection under 35 U.S.C. § 103(a) over Winslow in view of Itai, in view of Kanehisa, in view of Takai-Igarashi, and in view of Hogue, and withdrawal of the same.

CONCLUSION

In view of the foregoing amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims. Applicants therefore respectfully request that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully Submitted,
Nobuo TOMIOKA et al.



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